

**AN  
ECONOMIC  
IMPACT  
ANALYSIS OF  
FORT  
LEE**

**PREPARED FOR**

The Crater Planning District Commission

**PREPARED BY**

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# AN ECONOMIC IMPACT ANALYSIS OF FORT LEE

## INTRODUCTION

This analysis estimates the economic impact from the expenditures made by Fort Lee and staff on the economies that comprise a portion of the Crater Planning District. For the purpose of this study, the city of Richmond was included so that an economically sound model could be prepared. Those counties and cities are: Chesterfield, Dinwiddie, and Prince George Counties; Colonial Heights, Hopewell, Petersburg, and Richmond Cities. The study was conducted using expenditure data submitted by the administration of Fort Lee.

The economic benefits to the area from spending by Fort Lee for operations, construction, maintenance and payroll, are measured in terms of output, employee compensation, and employment.

The impact analysis was conducted by the Economic Operations Research (EOR) section of the Economic Information Services (EIS) Division at the Virginia Employment Commission (VEC) on behalf of Mr. Dennis Morris, Executive Director of the Crater Planning District Commission. Mr. Morris coordinated the data gathering

process between the VEC and Fort Lee and served as the lead person on this project. The VEC and Fort Lee are extremely grateful for Mr. Morris's leadership and consultation.

## METHODOLOGY

VEC economists used IMPLAN (Impact Analysis for Planning) to estimate the impact of expenditures on jobs and salaries and wages on the defined Crater Planning District and City of Richmond area economies. IMPLAN is a regional economic impact modeling system that provides estimates of the effects on output, employment, and salaries and wages from changes in economic activity. The IMPLAN model measures the economic impact in terms of direct, indirect, and induced effects.

*As an example, consider the increase in demand for computer parts. An increase in demand would cause the manufacturer of computer parts to increase production in order to meet that demand (**Direct Effect**). Consequently, the manufacturer would need additional production inputs, such as electronics and wire from those respective suppliers, generating an increase in production from the industries that supply the inputs (**Indirect Effect**). Finally, the increase in final demand would initiate an increase in household income (direct and indirect effects) generating an increase in income and employment in those industries that are recipients of household spending (**Induced Effect**).*

## **SUMMARY PROFILE**

In 2001, Fort Lee employed 6,800 people in total: 3,025 military, 2,430 civilian, and 605 contractors, along with 430 Non-Appropriated Funds (NAF) and 310 Army Air Force Exchange Service (AAFES) employees. The total cost of operating Fort Lee, including salary and wages, in 2001 totaled \$526.6 million. Salary and wage expenditures of \$212.6 million accounted for approximately 40 percent of the total. The remaining \$314.1 million was spent on an array of operation and building expenditures such as construction, operations supplies, furniture and computer supplies, educational services, equipment, utilities, and consulting services. The direct expenditures shown in tables 1 and 2 are less than the total expenditure data supplied by Fort Lee; this is due to natural leakages of money from the study area along with adjustments for wholesale and retail margins. Table 1 summarizes the employment and expenditures impact. In 2001, Fort Lee supported 14,813 full-time equivalent jobs (FTE) in the area, which includes 6,800 Fort Lee staff. The impact on the area's economy from Fort Lee's expenditures amounted to \$685.7 million dollars.

*Table 1*

**Summary of the  
Economic Impact of  
Fort Lee 2001  
(\$Millions)**

	<b>Initial</b>	<b>Multiplier Effects</b>	<b>Total</b>
Employment	6,800	8,013	14,813
Expenditures	\$422.5	\$263.2	\$685.7

Source: Virginia Employment Commission, July 2002. Totals may not sum correctly due to rounding.



## IMPACT ANALYSIS

This study revealed that in 2001 Fort Lee contributed nearly \$700 million dollars to the Crater Planning District and City of Richmond area economies through wage and non-wage expenditures. The following table shows the estimated economic impact of \$685.7 million in total output (value of all goods and services produced) supported an estimated 8,013 additional jobs, with an associated \$265.7 million in employee compensation. (These jobs were in addition to the 6,800 staff employed by Fort Lee).

Table 2 reveals more detail of the impact from Fort Lee. The direct effects associated with these expenditures after accounting for leakages and margins were an estimated \$422.5 million in output and 4,730 additional jobs to carry out the Fort Lee operations, with \$175.9 million in additional employee compensation. The direct spending generated added economic activity, that is, indirect and induced spending on other goods and services in the economy. The indirect effects from local inter-industry purchases were \$73.8 million in output and 820 jobs, with \$26.6 million in employee compensation. The induced effects that stem from the increased household income from the direct and indirect effects were \$189.4 million in output and 2,463 jobs, with \$63.2 million in employee compensation. The value added portion of this impact, which includes employee compensation, proprietary income, and incomes from rents, royalties, and dividends, along with indirect business taxes amounted to \$445.2 million.

Table 2

Economic Component  
Analysis of  
Fort Lee 2001  
(*\$Millions*)

Effects	Output	Value Added	Employee Compensation	Employment
Direct	\$422.5	\$273.4	\$212.6*+ \$175.9	6,800*+ 4,730
Indirect	\$73.8	\$46.4	\$26.6	820
Induced	\$189.4	\$125.5	\$63.2	2,463
<b>Total</b>	<b>\$685.7</b>	<b>\$445.2</b>	<b>\$478.3</b>	<b>14,813</b>

Source: Virginia Employment Commission, July 2002. Totals may not sum correctly due to rounding.

\* Fort Lee Salary and Wages, and Employment

The Standard Industrial Classification (SIC) system arranges industries into particular groups that are in accordance with the structure of the economy. The groupings are subdivided into four sections: i.e., Division (1 digit), Major Group (2 digits), 3 digits, and 4 digits (see [Appendix 1](#)). Table 3 illustrates the economic impact of Fort Lee by industrial division as measured by employee compensation, output, and employees. It is evident that with the inclusion of Fort Lee, the Government Division is the largest impacted industry in regards to employment and employee compensation.

The second largest industrial division by this measurement, and first in respect to output, is the Services Division. After allowing for financial leakages from the area borders, there still remains \$366.3 million of services sold in the area, \$175.3 in employee compensation associated with 4,692 full-time equivalent jobs. All other Divisions, with the exception of Mining as expected, have at least one measure of impact that is significant to the defined Crater Planning District and City of Richmond area economies.

*Table 3*

Impact Analysis of Fort Lee  
by Industry Division  
(*\$Millions*)

Industry	Employee Compensation	Output	Employment
Agriculture	\$0.265	\$1.008	26
Mining	\$0.026	\$0.220	1
Construction	\$14.086	\$42.356	410
Manufacturing	\$5.437	\$28.276	134
TCPU*	\$10.734	\$47.793	251
Trade*	\$39.357	\$88.932	1,928
FIRE*	\$14.560	\$97.041	385
Services	\$175.278	\$366.347	4,692
Government	\$217.264	\$12.517	6,887
Other	\$1.255	\$1.225	100
<b>Total</b>	<b>\$478.264</b>	<b>\$685.746</b>	<b>14,813</b>

Source: Virginia Employment Commission, July 2002. Totals may not sum correctly due to rounding.

\* Transportation, Communications, and Public Utilities; Wholesale and Retail Trade; Finance, Insurance, and Real Estate.

## TAX ANALYSIS

The calculation of the tax receipts by the State of Virginia and the respective local governments is an essential part of this economic impact analysis.

Virginia's individual income tax is the largest component of tax revenue, and for the most recent year available accounted for 31.1 percent of total taxes collected. Our analysis revealed the individual income taxes generated in 2001 through the activities of Fort Lee were 43.9 percent (\$19.6 million) of the total collected in the area. This positive difference is most likely reflective of the higher levels of income circulating in a metropolitan area. Our estimated 16.1 percent of total tax that the Sales Tax represents parallels that of the State at 15.8 percent. Corporate Income Tax at 12.0 percent of total tax is nearly six times higher than the State's respective portion. This substantial disparity is due to the significant amount of capital devoted to contractual services such as computer and data processing services.

Table 4

### Tax Impact of Fort Lee by Category of Tax

	<b>Tax Amount</b>	<b>Percent of Category</b>	<b>Percent of Total</b>
<b>Corporations</b>			
Corporate Income	\$5,342,872	99.79	11.96
Dividends	\$11,174	0.21	0.03
<b>Total</b>	<b>\$5,354,046</b>		11.99
<b>Indirect Business Taxes</b>			
Motor Vehicle License	\$218,103	1.17	0.49
Property Tax	\$8,740,411	46.91	19.57
State/Local Non-Tax	\$1,034,784	5.55	2.32
Sales Tax	\$7,192,393	38.60	16.10
Severance Tax	\$2,383	0.01	0.01
Other Tax	\$1,445,595	7.76	3.24
<b>Total</b>	<b>\$18,633,669</b>		41.72
<b>Personal Taxes</b>			
Income Tax	\$19,608,803	94.85	43.91
Motor Vehicle License	\$374,046	1.81	0.84
Non-taxes	\$498,222	2.41	1.12
Property Tax	\$127,691	0.62	0.29
Other Tax	\$63,928	0.31	0.14
<b>Total</b>	<b>\$20,672,690</b>		46.29
<b>Total Taxes</b>	<b>\$44,660,405</b>		

Source: Virginia Employment Commission, July 2002. Corporate Income Tax along with Personal Income Tax estimates derived from the use of average tax rates calculated by the Weldon Cooper Center for Public Service, University of Virginia. Totals may not sum correctly due to rounding.

## **IN CONCLUSION**

The purpose of this study is not to gauge the value of Fort Lee to the Army; yet, we would be remiss not to mention that it is the very existence of the varied and many Department of Defense organizations that are the catalyst of the beginnings of the economic impact on the Crater Planning District as defined in this analysis.

On the economic front, we have demonstrated that Fort Lee's presence is an essential source of economic strength to the Crater Planning District. The intensity of this force is even more discernible if considered at the core geographical level surrounding the immediate Fort Lee area. Here, scores of local businesses, small and large, have come into being and evolved over the years to meet the needs for goods and services by Fort Lee. We have shown that thousands of jobs are supported by this activity. These jobs provide millions of dollars in salaries and wages that in turn provide housing, subsistence, and education to many thousands more.

Another dimension this analysis does not consider, yet it is of great importance and that is what economic role Fort Lee will play in the decade to come. There is no accurate way to numerically forecast such a value; however, it can be stated with a significant level of confidence that Fort Lee's economic importance will continue to gain prominence as we progress into the 21<sup>st</sup> century. By all indications our national economy will not attain the levels of growth that were witnessed in the waning years of the previous century. Employment, corporate profits, and stock market values are expected to be lackluster in comparison. Moreover, and very importantly, this economic picture is a mirror image of the global economy. The Commonwealth of Virginia and its many counties and cities should on average experience similar patterns of growth to that of the nation and the world. Therefore, considering the relatively stable in-flow of Federal revenue, Fort Lee's distinction as an economic engine will continue to expand in the Crater Planning District as growth slows in the state and region.



## **Appendix 1**

### **SIC Division Structure**

- A. Division A: *Agriculture, Forestry, And Fishing*
  - Major Group 01: *Agricultural Production Crops*
  - Major Group 02: *Agricultural Production Livestock And Animal Specialties*
  - Major Group 07: *Agricultural Services*
  - Major Group 08: *Forestry*
  - Major Group 09: *Fishing, Hunting, And Trapping*
- B. Division B: *Mining*
  - Major Group 10: *Metal Mining*
  - Major Group 12: *Coal Mining*
  - Major Group 13: *Oil And Gas Extraction*
  - Major Group 14: *Mining And Quarrying Of Nonmetallic Minerals, Except Fuels*
- C. Division C: *Construction*
  - Major Group 15: *Building Construction General Contractors And Operative Builders*
  - Major Group 16: *Heavy Construction Other Than Building Construction Contractors*
  - Major Group 17: *Construction Special Trade Contractors*
- D. Division D: *Manufacturing*
  - Major Group 20: *- Food And Kindred Products*
  - Major Group 21: *Tobacco Products*
  - Major Group 22: *Textile Mill Products*
  - Major Group 23: *Apparel And Other Finished Products Made From Fabrics And Similar Materials*
  - Major Group 24: *Lumber And Wood Products, Except Furniture*
  - Major Group 25: *Furniture And Fixtures*
  - Major Group 26: *Paper And Allied Products*
  - Major Group 27: *Printing, Publishing, And Allied Industries*
  - Major Group 28: *Chemicals And Allied Products*
  - Major Group 29: *Petroleum Refining And Related Industries*
  - Major Group 30: *Rubber And Miscellaneous Plastics Products*
  - Major Group 31: *Leather And Leather Products*
  - Major Group 32: *Stone, Clay, Glass, And Concrete Products*
  - Major Group 33: *Primary Metal Industries*
  - Major Group 34: *Fabricated Metal Products, Except Machinery And Transportation Equipment*
  - Major Group 35: *Industrial And Commercial Machinery And Computer Equipment*
  - Major Group 36: *Electronic And Other Electrical Equipment And Components, Except Computer Equipment*
  - Major Group 37: *Transportation Equipment*
  - Major Group 38: *Measuring, Analyzing, And Controlling Instruments; Photographic, Medical And Optical Goods; Watches And Clocks*
  - Major Group 39: *Miscellaneous Manufacturing Industries*
- E. Division E: *Transportation, Communications, Electric, Gas, And Sanitary Services*
  - Major Group 40: *Railroad Transportation*
  - Major Group 41: *Local And Suburban Transit And Interurban Highway Passenger Transportation*



- Major Group 42: *Motor Freight Transportation And Warehousing*
- Major Group 43: *United States Postal Service*
- Major Group 44: *Water Transportation*
- Major Group 45: *Transportation By Air*
- Major Group 46: *Pipelines, Except Natural Gas*
- Major Group 47: *Transportation Services*
- Major Group 48: *Communications*
- Major Group 49: *Electric, Gas, And Sanitary Services*
- F. Division F: *Wholesale Trade*
  - Major Group 50: *Wholesale Trade-durable Goods*
  - Major Group 51: *Wholesale Trade-non-durable Goods*
- G. Division G: *Retail Trade*
  - Major Group 52: *Building Materials, Hardware, Garden Supply, And Mobile Home Dealers*
  - Major Group 53: *General Merchandise Stores*
  - Major Group 54: *Food Stores*
  - Major Group 55: *Automotive Dealers And Gasoline Service Stations*
  - Major Group 56: *Apparel And Accessory Stores*
  - Major Group 57: *Home Furniture, Furnishings, And Equipment Stores*
  - Major Group 58: *Eating And Drinking Places*
  - Major Group 59: *Miscellaneous Retail*
- H. Division H: *Finance, Insurance, And Real Estate*
  - Major Group 60: *Depository Institutions*
  - Major Group 61: *Non-depository Credit Institutions*
  - Major Group 62: *Security And Commodity Brokers, Dealers, Exchanges, And Services*
  - Major Group 63: *Insurance Carriers*
  - Major Group 64: *Insurance Agents, Brokers, And Service*
  - Major Group 65: *Real Estate*
  - Major Group 67: *Holding And Other Investment Offices*
- I. Division I: *Services*
  - Major Group 70: *Hotels, Rooming Houses, Camps, And Other Lodging Places*
  - Major Group 72: *Personal Services*
  - Major Group 73: *Business Services*
  - Major Group 75: *Automotive Repair, Services, And Parking*
  - Major Group 76: *Miscellaneous Repair Services*
  - Major Group 78: *Motion Pictures*
  - Major Group 79: *Amusement And Recreation Services*
  - Major Group 80: *Health Services*
  - Major Group 81: *Legal Services*
  - Major Group 82: *Educational Services*
  - Major Group 83: *Social Services*
  - Major Group 84: *Museums, Art Galleries, And Botanical And Zoological Gardens*
  - Major Group 86: *Membership Organizations*
  - Major Group 87: *Engineering, Accounting, Research, Management, And Related Services*
  - Major Group 88: *Private Households*
- J. Division J: *Public Administration*
  - Major Group 91: *Executive, Legislative, And General Government, Except Finance*

- Major Group 92: *Justice, Public Order, And Safety*
- Major Group 93: *Public Finance, Taxation, And Monetary Policy*
- Major Group 94: *Administration Of Human Resource Programs*
- Major Group 95: *Administration Of Environmental Quality And Housing Programs*
- Major Group 96: *Administration Of Economic Programs*
- Major Group 97: *National Security And International Affairs*
- Major Group 99: *Nonclassifiable Establishments*